What is claimed is:

1. A system for estimating a color temperature of a compressed video image and changing the color temperature of the compressed video image, the system comprising:

a color temperature estimation unit, which receives a video image compressed using block-based discrete cosine transformation, generates a DC video image corresponding to the compressed video image, and estimates a color temperature of the compressed video image using the DC video image;

a decoder, which decodes the compressed video image to generate an original video image; and

a color temperature change unit, which determines the estimated color temperature of the compressed video image or a color temperature of the decoded original video image as an application color temperature depending on whether the compressed video image is a moving video image, and changes the color temperature of the decoded original video image in accordance with the application color temperature and a color temperature preferred by a user.

2. The system of claim 1, wherein the color temperature estimation unit comprises:

a DC video image extraction section, which extracts DC coefficients of each block from the compressed video image, each DC coefficient representing an average value of pixel values of each block of video image, defines the DC coefficients as each pixel value, and generates a DC video image composed of the pixel values; and

a color temperature estimation section, which estimates a color temperature of the entire compressed video image from the color temperature of the DC video image.

3. The system of claim 2, wherein, when the compressed video image is a still video image or an internally-coded moving video image, the DC coefficients of each block are values obtained by multiplying DCT coefficients with respect to coordinates (0,0) of each DCT block by a predetermined constant.

4. The system of claim 2, wherein, when the compressed video image is an interframe-coded moving video image, the DC coefficients of each DCT block of a current frame are calculated as a sum of terms for four blocks of a previous frame, wherein each term is determined as a product of a ratio of the overlapping area of a DCT block whose DC coefficients of the current frame are to be extracted and DCT blocks of a previous frame to the area of the DCT blocks of the previous frame and DC coefficients of each DCT block of the previous frame.

5. The system of claim 1, wherein the color temperature change unit comprises:

an application color temperature determination section, which determines the estimated color temperature of the compressed video image or the color temperature of the decoded video image as an application color temperature depending on whether the compressed video image is a moving video image; and

a color temperature change section, which receives the color temperature preferred by the user and changes the color temperature of the decoded video image in accordance with the application color temperature and the color temperature preferred by the user.

6. The system of claim 5, wherein, when the compressed video image is interframe-coded, the application color temperature determination section compares a first color temperature difference between an estimated color temperature of the DC video image of the current frame and an estimated color temperature of the DC video image of the previous frame with a first predetermined critical value, and if the first color temperature difference is not larger than the first critical value, the application color temperature determination section determines an application color temperature of the current frame by adding a correction function to the application color temperature of the previous frame.

7. The system of claim 5, wherein, when the compressed video image is interframe-coded, the application color temperature determination section compares a first color temperature difference between the estimated color temperature of the DC video image of the corresponding frame and the estimated color temperature of the DC video image of the previous frame with a first predetermined critical value,

and if the first color temperature difference is larger than the first critical value, the application color temperature determination section receives the decoded current frame from the decoder, estimates a color temperature from the decoded current frame, calculates a second color temperature difference between the estimated color temperature of the DC video image of the current frame and the estimated color temperature of the decoded current frame, and compares the second color temperature difference with a predetermined second critical value, and if the second color temperature difference is not larger than the second critical value, the application color temperature determination section determines the estimated color temperature of the DC video image of the current frame as an application color temperature of the current frame.

8. The system of claim 5, wherein, when the compressed video image is interframe-coded, the application color temperature determination section compares a first color temperature difference between the estimated color temperature of the DC video image of the current frame and the estimated color temperature of the DC video image of the previous frame with a first predetermined critical value, and if the first color temperature difference is larger than the first critical value, the application color temperature determination section receives the decoded current frame from the decoder, estimates a color temperature from the decoded current frame, calculates a second color temperature difference between the estimated color temperature of the DC video image of the current frame and the estimated color temperature of the decoded current frame, and compares the second color temperature difference with a predetermined second critical value, and if the second color temperature difference is larger than the second critical value, the application color temperature determination section determines the estimated color temperature of the DC video image of the decoded current frame as an application color temperature of the current frame.

9. The system of any of claims 6 through 8, wherein the first color temperature difference between the estimated color temperature of the DC video image of the current frame and the estimated color temperature of the DC video image of the previous frame and the second color temperature difference between the estimated color temperature of the DC video image of the current frame and the

estimated color temperature of the decoded current frame are differences between values obtained by multiplying inverse numbers of each color temperature by a predetermined coefficient.

10. The system of any of claims 6 through 8, wherein the first and second critical values are equal to 200°K.

11. A method for estimating a color temperature of a compressed video image and changing the color temperature of the compressed video image, the method comprising:

(a) receiving a video image compressed using block-based discrete cosine transformation, generating a DC video image corresponding to the compressed video image, and estimating a color temperature of the compressed video image using the DC video image;

(b) decoding the compressed video image to generate an original video image; and

(c) determining the estimated color temperature of the compressed video image or a color temperature of the decoded original video image as an application color temperature depending on whether the compressed video image is a moving video image, and changing the color temperature of the decoded original video image in accordance with the application color temperature and a color temperature preferred by a user.

12. The method of claim 11, wherein step (a) comprises:

(a1) extracting DC coefficients of each block from the compressed video image, each DC coefficient representing an average value of pixel values of each block of the video image, defining the DC coefficients as each pixel value, and generating a DC video image composed of the pixel values; and

(a2) estimating a color temperature of the entire compressed video image from the color temperature of the DC video image.

13. The method of claim 12, wherein step (a) comprises, when the compressed video image is a still video image or an internally-coded moving video image, obtaining the DC coefficients of each block by multiplying DCT coefficients

with respect to coordinates (0,0) of each DCT block by a predetermined constant, defining the DC coefficients of each block as one pixel value, and generating the DC video image composed of the pixel values.

14. The method of claim 12, wherein step (a) comprises, when the compressed video image is an interframe-coded moving video image, calculating the DC coefficients of each DCT block of a current frame as a sum of terms for four blocks of a previous frame, wherein each term is determined as a product of a ratio of the overlapping area of a DCT block whose DC coefficients of the current frame are to be extracted and DCT blocks of a previous frame to the area of the DCT blocks of the previous frame and DC coefficients of each DCT block of the previous frame, defining the DC coefficients as each pixel value, and generating a DC video image composed of the pixel values.

15. The method of claim 11, wherein step (c) comprises:

(c1) determining the estimated color temperature of the compressed video image or the color temperature of the decoded original video image as an application color temperature depending on whether the compressed video image is a moving video image; and

(c2) receiving the color temperature preferred by the user and changing the color temperature of the decoded original video image in accordance with the application color temperature and the color temperature preferred by the user.

16. The method of claim 15, wherein step (c1) comprises,

(c11) when the compressed video image is interframe-coded, comparing a first color temperature difference between an estimated color temperature of the DC video image of the current frame and an estimated color temperature of the DC video image of the previous frame with a first predetermined critical value; and

(c12) if the first color temperature difference is not larger than the first critical value, determining an application color temperature of the current frame by adding a correction function to the application color temperature of the previous frame.

17. The method of claim 15, wherein step (c1) comprises:

(c11) when the compressed video image is interframe-coded, comparing a first color temperature difference between the estimated color temperature of the DC video image of the current frame and the estimated color temperature of the DC video image of the previous frame with a first predetermined critical value;

(c13) if the first color temperature difference is larger than the first critical value, receiving the decoded current frame from the decoder, estimating a color temperature from the decoded current frame, calculating a second color temperature difference between the estimated color temperature of the DC video image of the current frame and the estimated color temperature of the decoded current frame, and comparing the second color temperature difference with a predetermined second critical value; and

(c14) if the second color temperature difference is not larger than the second critical value, determining the estimated color temperature of the DC video image of the current frame as an application color temperature of the current frame.

18. The method of claim 15, wherein step (c1) comprises:

(c11) when the compressed video image is interframe-coded, comparing a first color temperature difference between the estimated color temperature of the DC video image of the current frame and the estimated color temperature of the DC video image of the previous frame with a first predetermined critical value;

(c13) if the first color temperature difference is larger than the first critical value, receiving the decoded current frame from the decoder, estimating a color temperature from the decoded current frame, calculating a second color temperature difference between the estimated color temperature of the DC video image of the current frame and the estimated color temperature of the decoded current frame, and comparing the second color temperature difference with a predetermined second critical value; and

(c15) if the second color temperature difference is larger than the second critical value, determining the estimated color temperature of the DC video image of the decoded current frame as an application color temperature of the current frame.

19. The method of any of claims 16 through 18, wherein the first color temperature difference between the estimated color temperature of the DC video image of the current frame and the estimated color temperature of the DC video

image of the previous frame and the second color temperature difference between the estimated color temperature of the DC video image of the current frame and the estimated color temperature of the decoded current frame are differences between values obtained by multiplying inverse numbers of each color temperature by a predetermined coefficient.

20. The method of any of claims 16 through 18, wherein the first and second critical values are equal to 200°K.

21. A computer readable recording medium having recorded thereon a method for estimating and changing a color temperature of a compressed video image of any of claims 11, 12, and 15.